Chapter 1
INTRODUCTION

The Upper East Coast is one of four regional planning areas in the South Florida Water Management District. The planning area covers approximately 1,200 square miles and includes most of Martin and St. Lucie counties, and a small portion of Okeechobee County (Figure 1). There is a transition in land use within the region from urban in the east to agricultural in the west. Agriculture has been the predominant land use and is expected to remain so in the future. Citrus is by far the dominant crop in the planning area and occupies over four-fifths of the irrigated agricultural acreage in the region. Interspersed with these land uses are over 200,000 acres of upland forests and wetlands.

The planning area faces many challenges in maintaining adequate water supply for growing urban and agricultural demands while meeting the needs of the environment. Agricultural water demand, which accounts for 84 percent of the overall water demand in the planning area, is expected to increase by approximately 23 percent through the planning horizon. At the same time, the region's population is projected to increase by 83 percent, from 252,000 to over 460,000. Overall water demand is projected to increase by 34 percent to 565 million gallons per day.

The planning time frame for this plan is 2020. The modeling analysis for this plan used 2010 projections from local governments and the agricultural industry. In order to comply with statutory changes in 1997, these projections were reviewed with more recent information. It was concluded that growth in both population and agriculture has not occurred as rapidly as originally projected, and the projections originally prepared for 2010 reasonably represent projections for the year 2020. This is explained in greater detail in Chapter 2.

PURPOSE

The purpose of the Upper East Coast (UEC) Water Supply Plan is to provide a framework for future water use decisions to provide adequate water supply for urban areas, agriculture, and the environment through 2020. The plan estimates the future water supply needs of urban areas and agriculture, weighs those demands against historically used water sources, and identifies areas where these demands cannot be met without harming the resource and environment, including wetlands. The plan evaluates the potential of several alternative water source options to meet any unmet demand and makes recommendations for their development.

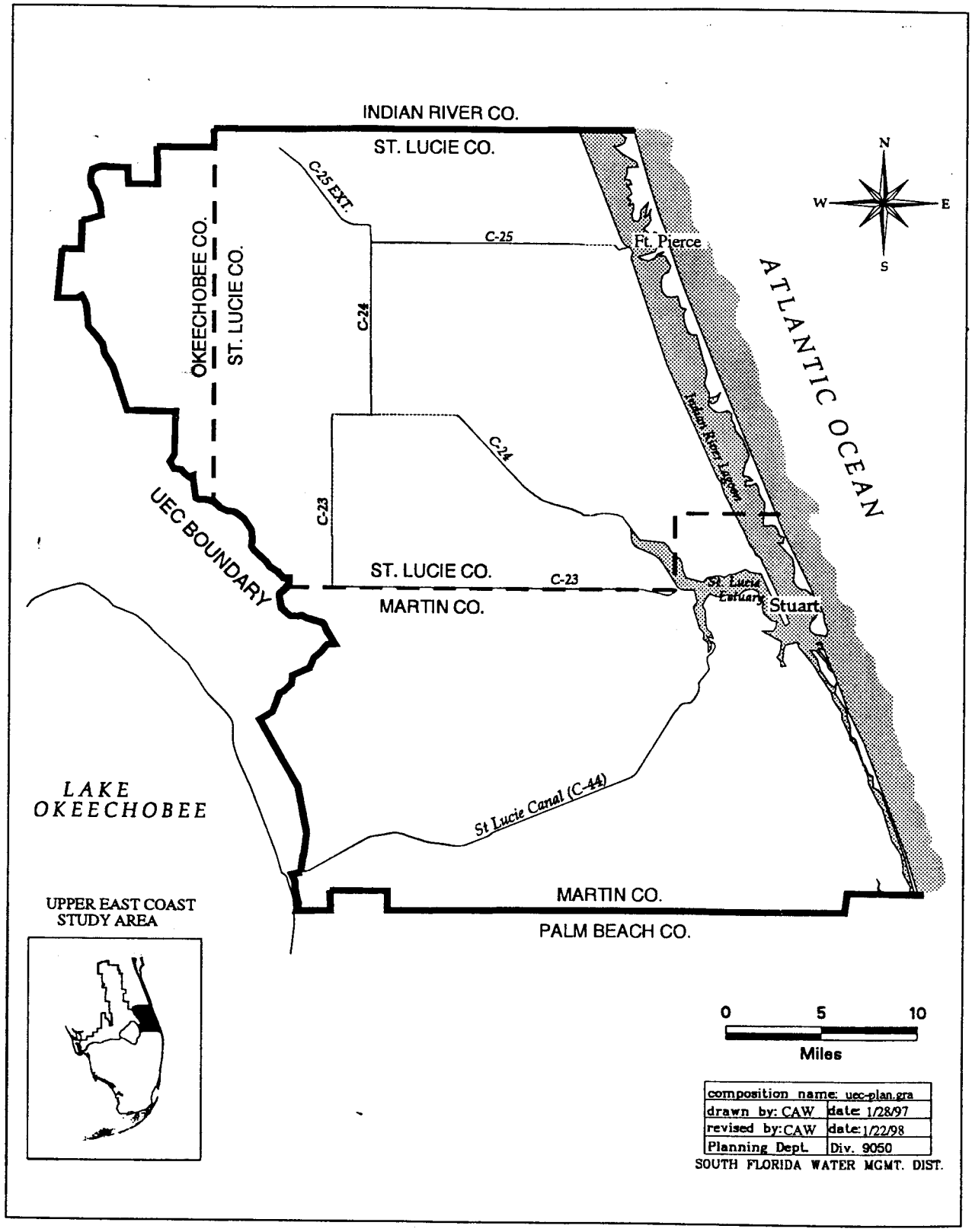

Figure 1. Upper East Coast Planning Area.

An important part of the planning process has been identifying constraints to water supply and exploring opportunities to maximize use of the resource. This involved extensive public input from the UEC Water Supply Plan Advisory Committee, whose members represent a variety of disciplines and interests, such as local governments, public water supply utilities, environmental interests, and agriculture, as well as the general public.

Water management in South Florida is multifunctional, reflecting the District's four main areas of responsibility: water supply, flood protection, water quality, and natural systems management. Due to the interrelationships of these areas of responsibility, the water supply plan was coordinated with other planning efforts in the region. For example, other related studies are addressing freshwater inflows to the St. Lucie Estuary. The solutions of these studies may enhance regional water supply by increasing surface water availability and improve water quality. This comprehensive, coordinated approach, combined with extensive public input throughout the planning process, ensures that solutions are balanced and consider all aspects of water management.

BASIS OF WATER SUPPLY PLANNING

The District's water supply planning functions are guided by the directives and policies embodied in the District's Water Supply Policy Document (SFWMD, 1991), Water Resource Implementation Rule (Chapter 62-40, F.A.C.), Chapter 373, F.S., the State Comprehensive Plan (Chapter 187, F.S.), and delegation of authority from the Florida Department of Environmental Protection (FDEP). In addition, new legislative directives were monitored throughout the development of this plan, keeping it current and consistent with the 1996 Governor's Executive Order (96-297) and the 1997 legislative water supply amendments to Chapter 373, F.S. Legal authority and requirements, including new legislation, is further described in Chapter 1 of the Support Document.

The Upper East Coast Water Supply Plan is the first water supply plan developed under this new statutory direction. As other water management districts develop their water supply planning initiatives, the SFWMD and the FDEP will work with them to develop a compatible statewide approach. Aspects that may be reviewed for compatibility include application of the 1-in-10 level of certainty goal and development of associated water demands. Any results of such an effort will be reflected in the five-year update to this plan.

PLAN GOALS

The UEC Water Supply Plan Advisory Committee adopted the water resource goal of the State Comprehensive Plan as the overall goal for the UEC Water Supply Plan:

> Florida shall assure the availability of an adequate supply of water for all competing uses deemed reasonable and beneficial and shall maintain the functions of natural systems and the overall present level of surface and ground water quality. Florida shall improve and restore the quality of waters not presently meeting water quality standards.

To ensure that the UEC Water Supply Plan addresses the specific needs of the region, the committee developed the following regional goals (no implied priority):

Goal 1. Water Supply: Promote the use of water supply alternatives and conservation.

Subgoals

1. Encourage the use of the lowest quality water available that is appropriate for a specific use.
2. Evaluate and promote the use of alternative sources of water including reclaimed water, aquifer storage and recovery, and the Floridan aquifer.
3. Increase water availability through increased regional storage.
4. Encourage interconnections between utilities.
5. Promote water conservation for all users of water through the use of higher efficiency irrigation systems and other water conservation measures.
6. Consider longer permit durations for permittees that commit to new technology and diversify water supply sources.

Goal 2. Floridan Aquifer: Establish water quality criteria limitations for the Floridan Aquifer System (FAS) within the UEC.

Subgoals

1. Continue to limit water quality degradation in the FAS by limiting drawdowns to land surface or less (no pump option). Consideration to allow short-term usage of pumps during extreme water shortages and freezes should be given. Pumps on ASR wells should be allowed on a case-by-case basis.
2. Coordinate existing well monitoring programs, expand where necessary to implement a comprehensive Floridan aquifer monitoring program to collect information on water quality (Cl, TDS, conductivity), water levels, rainfall and water use, and collect and tabulate historic data.
3. Re-establish a volunteer well abandonment program to conserve Floridan aquifer water and protect the quality of the SAS and FAS from potential contamination.
4. Continue investigation of the influence/impacts on the FAS from activities outside the UEC Planning Area, especially in southern Indian River County.
5. Coordinate investigation and development of water supply alternatives, compatible with other regional studies. Specifically, increasing surface water availability through regional attenuation facilities and ASR, to decrease the demand on the Floridan aquifer, especially in areas identified as potential

problem areas.
6. Encourage water conservation to reduce the demand on the Floridan aquifer.

Goal 3. Wetland Protection: Protect wetland systems from significant harm due to water use drawdowns.

Subgoals
1. Use existing regulatory protection guideline or equivalent, for the specified level of drought.
2. Establish different protection standards for different types of wetlands.
3. Applicability of protection standards based on wetland size. (For example, consider exemptions for small isolated wetlands).
4. Maintaining historical "seasonal" water levels under wetlands by encouraging use of alternative water supply sources.

Goal 4. Saltwater Intrusion: Develop criteria and programs for Surficial Aquifer System protection from saltwater intrusion.

Subgoals
1. Maintain current position of freshwater/saltwater interface during 1-in-10 dry rainfall event (equivalent to current criteria which bases permits on 90 day-no recharge at maximum pumpage allocation).
2. Enhance/expand saltwater monitoring network.

Goal 5. Level of Drought: Establish a level of certainty (annual rainfall event, expressed in terms of return frequency) for all permitted water uses and for the environment.

Subgoal
Use simulated 1 in 10 dry rainfall event for modeling purposes.

Goal 6. Flood Protection: Consider flood protection during the water supply planning process.

Subgoals
1. When evaluating potential water supply solutions during the planning process, flood protection benefits will be taken into account.
2. Consider rate versus volume for stormwater regulations.

Goal 7. Compatibility with Local Governments: Promote compatibility between the UEC Water Supply Plan and local land use decisions and policies.

Subgoals
1. Ensure that water supply plan population projections are compatible with local government comprehensive plans.
2. Review local government comprehensive plan amendments for compatibility with the UEC Water Supply Plan.

3. Review existing information and technical publications regarding impacts of various land uses on water resources.
4. Ensure coordination with the Treasure Coast Regional Planning Council to facilitate compatibility between the UEC Water Supply Plan and local land use decisions.

Goal 8. Estuary: Protect and enhance the St. Lucie Estuary and Indian River Lagoon.

Subgoals

1. Maintain continuity in public input by continuing UECWSP Advisory Committee through completion of the IRL Feasibility Study.
2. Endorse the salinity envelope concept from the IRL SWIM Plan.
3. Promote regional solutions for the estuaries, such as, but not limited to, regional attenuation facilities, C-131 flowway, St. Lucie flowway, onsite detention/retention, and removal of St. Lucie organic sediments.
4. Recommend investigation of impacts of discharge volume in addition to discharge rates, which is the current surface water permitting practice.
5. Identify potential solutions which are outside the scope of other existing studies to enhance and protect these estuarine systems. Possible examples include voluntary incentive-based approaches or Best Management Practices (BMPs) which decrease current discharge practices.

Goal 9. Linkages with other Regional Planning Efforts: Promote compatibility and integration with other related regional water resource planning efforts, including Indian River Lagoon (IRL) Surface Water Improvement and Management (SWIM) Plan, IRL Restoration Feasibility Study, Lake Okeechobee SWIM Plan, Lake Okeechobee Regulation Schedule Study, Lower East Coast Water Supply Plan, Central and Southern Florida Comprehensive Review Study (a.k.a: C&SF Restudy), the IRL National Estuary Program Comprehensive Conservation and Management Plan, Regional Attenuation Facility Task Force, Strategic Regional Policy Plan, and St. Johns River Water Management District Regional Water Supply Assessment.

Subgoals

1. Ensure compatibility between the goals and implementation strategies of completed plans.
2. Integrate these parallel efforts, where appropriate, when formulating plan strategies and recommendations.
3. Look for opportunities to enhance the success and timeliness of other related planning efforts.

These goals captured the key issues and concerns in the planning area, and in turn, provided direction for the planning process.